

Data Limitations and Validation Report

for Lockheed Idaho Technologies

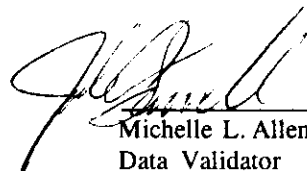
Case No. 93052416, SDG 93052416

Argonne National Laboratory - West

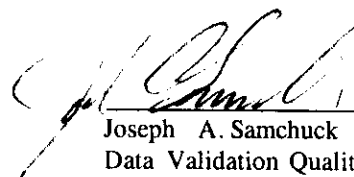
TCL Appendix IX Volatile Organics

Four Aqueous Samples

Validated by:

 12-5-96  
Michelle L. Allen  
Data Validator

Approved by:

 12-4-96  
Joseph A. Samchuck  
Data Validation Quality  
Assurance Officer

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## 1.0 INTRODUCTION

The Argonne National Laboratory - West sample set for Case No. 93052416, SDG 93052416 consists of four aqueous samples analyzed for Target Compound List (TCL) Appendix IX volatile organic compounds. The analyses were performed by Biospherics, Inc. using the protocols outlined in the "Analytical Laboratory Services for Environmental Groundwater Samples for the Argonne National Laboratory - West" Statement of Work (SOW). A total of 184 TCL sample data points were reported in this analytical data set.

The analytical data from these analyses were reviewed by HALLIBURTON NUS Corporation personnel as Level A in accordance with ERP Standard Operating Procedure SMO-SOP-12.1.3.

## 2.0 QUALITY CONTROL SUMMARY

The data were evaluated based on the following parameters:

- \* Data Completeness
- \* Holding Times
- \* GC/MS Tuning and Mass Calibration
- \* Initial and Continuing Calibrations
- \* Blank Analyses
- \* Surrogate Spike Recoveries
- \* Matrix Spike/Matrix Spike Duplicate Results
- \* Blank Spike Results
- \* Internal Standards Performance
- \* System Performance and Detection Limits
- \* Laboratory Performance
- \* Compound Quantitation

The asterisk indicates that all quality control criteria were met for this parameter. Problem areas affecting data usability are discussed in Section 4.0 of this report. A Glossary of Data Validation Flags which defines the validation qualifiers applied on a sample-specific basis is presented in Section 6.0.

## 3.0 DATA COMPLETENESS

The data presented in Case No. 93052416, SDG 93052416 consists of TCL Appendix IX volatile organic results for four (4) aqueous sample as follows:

93052416-1 (EBR II NO1)	93052416-2 (EBR II NO2)
93052416-3 (MW-11)	93052416-4 (TRIP BLANK)

The data package was missing the bromofluorobenzene (BFB) tune (Form V) corresponding to the initial calibration, the initial calibration Form VI containing target compound Percent Relative Standard Deviations (%RSDs) and Relative Response Factors (RRFs), and the associated initial calibration raw data. In addition, the Blank Spike (BS) analysis Form III, and the laboratory method blank Form I and associated raw data were not included in this data package. Hence, the data in this SDG could not be evaluated for these parameters. It should be noted that the presentation and documentation of the data package deliverables were extremely poor. The data package does not conform to a Level A deliverable.

#### 4.0 SUMMARY OF DATA USABILITY

The Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples were analyzed outside the 12 hour BFB tune. No action was taken since these are quality control samples.

Continuing calibration Percent Differences (%Ds) for chloromethane, bromomethane, chloroethane, methylene chloride, acetone, carbon disulfide, and xylenes (total) exceeded 75%. The nondetected results reported for these compounds in the associated environmental samples were qualified as rejected, "R".

Some continuing calibration %Ds for 1,1-dichloroethene, 2-butanone, cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1,2,2-tetrachloroethane were greater than the 25% quality control limit. No actions were necessary since no positive results were reported for these compounds in the affected samples and the nondetects were not compromised.

The MS/MSD analyses yielded Percent Recoveries (%Rs) for 1,1-dichloroethene and benzene were above the upper quality control limits. No qualifications were necessary since no positive results were reported for these compounds in the unspiked sample.

The Appendix IX volatile compounds allyl chloride, methacrylonitrile, and propanenitrile were included in the continuing calibration 50 ppb standard. Hence, these compounds were qualified as rejected, "R", on the environmental sample Form Is.

Annotated laboratory Form I data summary reports showing the data and relevant qualifier flags applied are presented in Appendix A of this report. Copies of the unqualified data summary reports as reported by the laboratory are provided in the attached Appendix B. The attached Appendix C includes documentation to support the findings discussed in this report.

A sample-specific summary of the data validation flags applied is depicted in Table 1, appearing on the following page. The qualifier flags used as a result of the validation process are defined in Section 6.0 (Glossary of Data Validation Flags) of this report. Details regarding the application of the validation qualifiers are discussed in the remainder of this section.

#### 4.1 GC/MS Tuning

The MS/MSD samples were analyzed outside the 12 hour BFB tune criterion. No actions were necessary since these are quality control samples.

#### 4.2 Calibrations

The continuing calibration performed on instrument GC/MS#1 (05/28/93) contained the following continuing calibration Percent Differences (%Ds) which exceeded 75%.

<u>Compound</u>	<u>%D</u>
chloromethane	79.6
bromomethane	93.0
chloroethane	110.7
methylene chloride	126.8
acetone	117.0
carbon disulfide	76.8
xylenes (total)	132.5

**TABLE 1**

**Lockheed Idaho Technologies**  
**Argonne National Laboratory - West**  
**Case No. 93052416, SDG 93052416**  
**TCL Appendix IX Volatile Organics**

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Sample No.	Qualifier Flags
<hr/>	
93052416-1 (EBR II NO1)	R <sup>1,2</sup>
93052416-2 (EBR II NO2)	R <sup>1,2</sup>
93052416-3 (MW-11)	R <sup>1,2</sup>
93052416-4 (TRIP BLANK)	R <sup>1,2</sup>

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Affected Samples: All

The nondetected results reported for these compounds in the associated environmental samples were qualified as rejected, "R".

The continuing calibration performed on instrument GC/MS#1 (05/28/93) contained the following continuing calibration Percent Differences (%Ds) which failed to meet the 25% quality control criteria.

<u>Compound</u>	<u>%D</u>
1,1-dichloroethene	28.6
2-butanone	34.1
cis-1,3-dichloropropene	45.1
trans-1,3-dichloropropene	41.1
1,1,2,2-tetrachloroethane	43.3

Affected Sample: All

Only nondetected results were reported for these compounds in the affected samples and these nondetects were not compromised.

#### **4.3 Matrix Spike/Matrix Spike Duplicate**

The %Rs for 1,1-dichloroethene and benzene in the MS/MSD analyses performed on sample 93052416-4 (TRIP BLANK) were high. No qualifications were necessary since no positive results were reported for these compounds in the unspiked sample.

#### **5.0 SUMMARY OF LABORATORY PERFORMANCE**

The data associated with the initial calibration was missing from this SDG. The BS analysis Form III was not included. The field identification was not used to name the environmental samples, the sample location ("EBR II NO1, EBR II NO2, MW-11, and TRIP BLANK") were used. Hence, the data validator used both the Biospherics laboratory IDs, 93052416-1, -2, -3, and -4, and the field IDs. The data validator was not positive that the correct Chain-of-Custody (C-O-C) was referenced for the data validation as a result of the incorrect field IDs used. Several compounds were rejected as a result of %Ds exceedances >75%. It should be noted that several forms had incomplete and/or incorrect times and dates, the internal standard Form VIII had the wrong continuing calibration areas/retention times, and the sample Form Is did not contain laboratory qualifiers. The data validator manually corrected these errors. A laboratory method blank was not included in the data package. Xylenes (total) and the individual isomers (m,p-xylene and o-xylene) were both reported on the sample Form Is. Validation action was taken only on xylenes (total). The laboratory failed to standardize for three target compounds, hence, these were rejected on the sample Form Is. Several continuing calibration %Ds were noncompliant.

#### **6.0 GLOSSARY OF DATA VALIDATION FLAGS**

The following data validation flags were applied to the sample data for reasons detailed previously in this report:

- R<sup>1</sup> - Reject, "R", nondetected results for chloromethane, bromomethane, chloroethane, methylene chloride, acetone, carbon disulfide, and xylenes (total) as a result of continuing calibration %Ds > 75%.

R<sup>2</sup> - Reject, "R", nondetected results for allyl chloride, methacrylonitrile, and propanenitrile as a result of the laboratory's failure to standardize for these compounds.

## **7.0 REFERENCES**

The data referenced in this report were validated in accordance with the protocols outlined in ERP Standard Operating Procedure SMO-SOP-12.1.3 as presented in ERP-SOW-37. In addition, details stipulating laboratory procedures as outlined in "Analytical Laboratory Services for Environmental Groundwater Samples for the Argonne National Laboratory - West" SOW were referenced.

**APPENDIX A**  
**QUALIFIED LABORATORY RESULTS**

1A  
VOLATILE ORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

Lab Name: BIOSPHERICS INCORPORATED Contract: ARGONNE

EBR II NO1

Lab Code: EBRIINO1 Case No. 93052416 SAS No.: \_\_\_\_\_ SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: 93052416-1

Sample wt/vol: \_\_\_\_\_ (g/mL) Lab File ID: 8240

Level: (low/med) LOW Date Received: 05/21/93

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 05/28/93

GC Column: \_\_\_\_\_ ID: \_\_\_\_\_ (mm) Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/L Q

74-87-3	Chloromethane	MA	20	WF	R
74-83-9	Bromomethane	2/27/96	20	WF	R
75-01-4	Vinyl Chloride		10	U	
75-00-3	Chloroethane		20	WF	R
75-09-2	Methylene Chloride		5	WF	R
67-64-1	Acetone		10	WF	R
75-15-0	Carbon Disulfide		5	WF	R
75-35-4	1,1-Dichloroethene		5	U	
75-34-3	1,1-Dichloroethane		5		
540-59-0	1,2-Dichloroethene (total)		5		
67-66-3	Chloroform		5		
107-06-2	1,2-Dichloroethane		5		
78-93-3	2-Butanone		10		
71-55-6	1,1,1-Trichloroethane		5		
56-23-5	Carbon Tetrachloride		5		
75-27-4	Bromodichloromethane		5		
78-87-5	1,2-Dichloropropane		5		
10061-01-5	cis-1,3-Dichloropropene		5		
79-01-6	Trichloroethene		5		
124-48-1	Dibromochloromethane		5		
79-00-5	1,1,2-Trichloroethane		5		
71-43-2	Benzene		5		
10061-02-6	trans-1,3-Dichloropropene		5		
75-25-2	Bromoform		5		
108-10-1	4-Methyl-2-Pentanone		10		
591-78-6	2-Hexanone		10		
127-18-4	Tetrachloroethene		5		
79-34-5	1,1,2,2-Tetrachloroethane		5		
108-88-3	Toluene		5		
108-90-7	Chlorobenzene		5		
100-41-4	Ethylbenzene		5		
100-42-5	Styrene		5		
1330-20-7	Xylene (total)	V	5	WF	R

## VOLATILE ORGANIC ANALYSIS DATA SHEET

EBR II NO1

Lab Name: BIOSPHERICS INCORPORATED Contract: ARGONNELab Code: EBR II NO1 Case No. 93052416 SAS No.: \_\_\_\_\_ SDG No.: \_\_\_\_\_Matrix: (soil/water) WATER Lab Sample ID: 93052516-1Sample wt/vol: \_\_\_\_\_ (g/mL) Lab File ID: 8240Level: (low/med) LOW Date Received: 05/21/93% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 05/28/93

GC Column: \_\_\_\_\_ ID: \_\_\_\_\_ (mm) Dilution Factor: \_\_\_\_\_

Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

oil Extrac CAS NO. COMPOUND CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/L Q

97-63-2- - - - -	Ethyl Methacrylate	MLA	5	u
107-02-8- - - - -	Acrolein	2/27/96	50	
108-05-4- - - - -	Vinyl Acetate		10	
107-13-1- - - - -	Acrylonitrile		50	
110-75-8- - - - -	2-Chloroethyl Vinyl Ether		10	
108-38-3- - - - -	M & P Xylene		10	
95-47-6- - - - -	O Xylene		5	
1634-04-4- - - - -	Methyl tert-Butyl Ether		5	
17-05-1- - - - -	Allyl Chloride		50	
126-98-7- - - - -	Methacrylonitrile		50	
107-12-0- - - - -	Propanenitrile		50	
74-88-4- - - - -	Iodomethane		50	
80-62-6- - - - -	Methyl Methacrylate		20	

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1A  
VOLATILE ORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

EBR II NO2

Lab Name: BIOSPHERICS INCORPORATED Contract: ARGONNE

Lab Code: EBRIINO2 Case No. 93052416 SAS No.: \_\_\_\_\_ SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: 93052416-2

Sample wt/vol: \_\_\_\_\_ (g/mL) Lab File ID: 8240

Level: (low/med) LOW Date Received: 05/21/93

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 05/28/93

GC Column: \_\_\_\_\_ ID: \_\_\_\_\_ (mm) Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L 0

74-87-3	Chloromethane	MA	10	45	R
74-83-9	Bromomethane	2/27/96	10	45	R
75-01-4	Vinyl Chloride		10	45	
75-00-3	Chloroethane		10	45	R
75-09-2	Methylene Chloride		5	45	R
67-64-1	Acetone		10	45	R
75-15-0	Carbon Disulfide		5	45	R
75-35-4	1,1-Dichloroethene		5	45	R
75-34-3	1,1-Dichloroethane		5	45	
540-59-0	1,2-Dichloroethene (total)		5	45	
67-66-3	Chloroform		5	45	
107-06-2	1,2-Dichloroethane		5	45	
78-93-3	2-Butanone		10	45	
71-55-6	1,1,1-Trichloroethane		5	45	
56-23-5	Carbon Tetrachloride		5	45	
75-27-4	Bromodichloromethane		5	45	
78-87-5	1,2-Dichloropropane		5	45	
10061-01-5	cis-1,3-Dichloropropene		5	45	
79-01-6	Trichloroethene		5	45	
124-48-1	Dibromochloromethane		5	45	
79-00-5	1,1,2-Trichloroethane		5	45	
71-43-2	Benzene		5	45	
10061-02-6	trans-1,3-Dichloropropene		5	45	
75-25-2	Bromoform		5	45	
108-10-1	4-Methyl-2-Pentanone		10	45	
591-78-6	2-Hexanone		10	45	
127-18-4	Tetrachloroethene		5	45	
79-34-5	1,1,2,2-Tetrachloroethane		5	45	
108-88-3	Toluene		5	45	
108-90-7	Chlorobenzene		5	45	
100-41-4	Ethylbenzene		5	45	
100-42-5	Styrene		5	45	
1330-20-7	Xylene (total)	✓	5	45	R

1A  
VOLATILE ORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

Lab Name: BIOSPHERICS INCORPORATED Contract: ARGONNE

EBR II NO2

Lab Code: EBRII NO2 Case No. 93052416 SAS No.: \_\_\_\_\_ SDG No.: \_\_\_\_\_

ab Name: \_\_\_\_\_

Matrix: (soil/water) WATER

Lab Sample ID: 93052416-2

ab Code: \_\_\_\_\_

Sample wt/vol: \_\_\_\_\_ (g/mL)

Lab File ID: 8240

atrix: (soil/water) \_\_\_\_\_

Level: (low/med) LOW

Date Received: 05/21/93

ample wt/vol: \_\_\_\_\_

% Moisture: not dec. \_\_\_\_\_

Date Analyzed: 05/28/93

evel: (low/med) \_\_\_\_\_

GC Column: \_\_\_\_\_ ID: \_\_\_\_\_ (mm)

Dilution Factor: \_\_\_\_\_

Moisture: not dec. \_\_\_\_\_

Soil Extract Volume: \_\_\_\_\_ (uL)

Soil Aliquot Volume: \_\_\_\_\_ (uL)

C Column: \_\_\_\_\_

oil Extrac CAS NO.

COMPOUND

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Q

97-63-2- - - - -	Ethyl Methacrylate	MA	5	U
107-02-8- - - - -	Acrolein	2796	50	
108-05-4- - - - -	Vinyl Acetate		10	
107-13-1- - - - -	Acrylonitrile		50	
110-75-8- - - - -	2-Chloroethyl Vinyl Ether		10	
108-38-3- - - - -	M & P Xylene		10	
95-47-6- - - - -	O Xylene		5	
1634-04-4- - - - -	Methyl tert-Butyl Ether		5	
17-05-1- - - - -	Allyl Chloride		50	R
126-98-7- - - - -	Methacrylonitrile		50	R
107-12-0- - - - -	Propenenitrile		50	R
74-88-4- - - - -	Iodomethane		50	U
80-62-6- - - - -	Methyl Methacrylate	✓	20	U

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1A  
VOLATILE ORGANIC ANALYSIS DATA SHEET

SAMPLE NUMBER

MW-11

Lab Name: BIOSPHERICS INCORPORATED Contract: ARGONNE

Lab Code: MW-11 Case No. 93052416 SAS No.: \_\_\_\_\_ SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: 93052416-3

Sample wt/vol: \_\_\_\_\_ (g/mL) Lab File ID: 8240

Level: (low/med) LOW Date Received: 05/21/93

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 05/28/93

GC Column: \_\_\_\_\_ ID: \_\_\_\_\_ (mm) Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:  
CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

74-87-3-	Chloromethane	10	10
74-83-9-	Bromomethane	10	10
75-01-4-	Vinyl Chloride	10	10
75-00-3-	Chloroethane	10	10
75-09-2-	Methylene Chloride	10	10
67-64-1-	Acetone	10	10
75-15-0-	Carbon Disulfide	5	5
75-35-4-	1,1-Dichloroethene	5	5
75-34-3-	1,1-Dichloroethane	5	5
540-59-0-	1,2-Dichloroethene (total)	5	5
67-66-3-	Chloroform	5	5
107-06-2-	1,2-Dichloroethane	5	5
78-93-3-	2-Butanone	10	10
71-55-6-	1,1,1-Trichloroethane	5	5
56-23-5-	Carbon Tetrachloride	5	5
75-27-4-	Bromodichloromethane	5	5
78-87-5-	1,2-Dichloropropane	5	5
10061-01-5-	cis-1,3-Dichloropropene	5	5
79-01-6-	Trichloroethene	5	5
124-48-1-	Dibromochloromethane	5	5
79-00-5-	1,1,2-Trichloroethane	5	5
71-43-2-	Benzene	5	5
10061-02-6-	trans-1,3-Dichloropropene	5	5
75-25-2-	Bromoform	5	5
108-10-1-	4-Methyl-2-Pentanone	10	10
591-78-6-	2-Hexanone	10	10
127-18-4-	Tetrachloroethene	5	5
79-34-5-	1,1,2,2-Tetrachloroethane	5	5
108-88-3-	Toluene	5	5
108-90-7-	Chlorobenzene	5	5
100-41-4-	Ethylbenzene	5	5
100-42-5-	Styrene	5	5
1330-20-7-	Xylene (total)	5	5

1A  
VOLATILE ORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

Lab Name: BIOSPHERICS INCORPORATED Contract: ARGONNE

MW-11

Lab Code: MW-11 Case No. 93052416 SAS No.: \_\_\_\_\_ SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: 93052416-3

Sample wt/vol: \_\_\_\_\_ (g/mL) \_\_\_\_\_ Lab File ID: 8240

Level: (low/med) LOW Date Received: 05/21/93

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 05/28/93

GC Column: \_\_\_\_\_ ID: \_\_\_\_\_ (mm) Dilution Factor: \_\_\_\_\_

Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

oil Extrac CAS NO. \_\_\_\_\_ COMPOUND \_\_\_\_\_ CONCENTRATION UNITS:  
(ug/L or ug/Kg) UG/L Q

97-63-2- - - - -	Ethyl Methacrylate	<u>MMA</u>	<u>5</u>	<u>U</u>
107-02-8- - - - -	Acrolein	<u>2/27/94</u>	<u>50</u>	
108-05-4- - - - -	Vinyl Acetate		<u>10</u>	
107-13-1- - - - -	Acrylonitrile		<u>50</u>	
110-75-8- - - - -	2-Chloroethyl Vinyl Ether		<u>10</u>	
108-38-3- - - - -	M & P Xylene		<u>10</u>	
95-47-6- - - - -	O Xylene		<u>5</u>	
1634-04-4- - - - -	Methyl tert-Butyl Ether		<u>5</u>	
17-05-1- - - - -	<del>Allyl Chloride</del>		<u>50</u>	<u>R</u>
126-98-7- - - - -	<del>Methacrylonitrile</del>		<u>50</u>	<u>R</u>
107-12-0- - - - -	<del>Acrylonitrile</del>		<u>50</u>	<u>R</u>
74-88-4- - - - -	Iodomethane		<u>50</u>	<u>U</u>
80-62-6- - - - -	Methyl Methacrylate	<u>✓</u>	<u>20</u>	<u>U</u>

FORM I VOA

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OLM02.0

1A  
VOLATILE ORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

TRIP BLANK

Lab Name: BIOSPHERICS INCORPORATED Contract: ARGONNE

Lab Code: BLANK Case No. 93052416 SAS No.: \_\_\_\_\_ SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: 93052416-4

Sample wt/vol: \_\_\_\_\_ (g/mL) Lab File ID: 8240

Level: (low/med) LOW Date Received: 05/21/93

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 05/28/93

GC Column: \_\_\_\_\_ ID: \_\_\_\_\_ (mm) Dilution Factor: 1

Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

74-87-3	Chloromethane	MLA 10	UF	R
74-83-9	Bromomethane	212796 10	UF	R
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	UF	R
75-09-2	Methylene Chloride	10	UF	R
67-64-1	Acetone	10	UF	R
75-15-0	Carbon Disulfide	5	UF	R
75-35-4	1,1-Dichloroethene	5	U	
75-34-3	1,1-Dichloroethane	5	U	
540-59-0	1,2-Dichloroethene (total)			
67-66-3	Chloroform	5	U	
107-06-2	1,2-Dichloroethane	5		
78-93-3	2-Butanone	10		
71-55-6	1,1,1-Trichloroethane	5		
56-23-5	Carbon Tetrachloride	5		
75-27-4	Bromodichloromethane	5		
78-87-5	1,2-Dichloropropane	5		
10061-01-5	cis-1,3-Dichloropropene	5		
79-01-6	Trichloroethene	5		
124-48-1	Dibromochloromethane	5		
79-00-5	1,1,2-Trichloroethane	5		
71-43-2	Benzene	5		
10061-02-6	trans-1,3-Dichloropropene	5		
75-25-2	Bromoform	5		
108-10-1	4-Methyl-2-Pentanone	10		
591-78-6	2-Hexanone	10		
127-18-4	Tetrachloroethene	5		
79-34-5	1,1,2,2-Tetrachloroethane	5		
108-88-3	Toluene	5		
108-90-7	Chlorobenzene	5		
100-41-4	Ethylbenzene	5		
100-42-5	Styrene	5		
1330-20-7	Xylene (total)	5	UF	R

1A  
VOLATILE ORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

Lab Name: BIOSPHERICS INCORPORATED Contract: ARGONNE

TRIP BLANK

Lab Code: BLANK Case No. 93052416 SAS No.: \_\_\_\_\_ SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: 93052416-4

Sample wt/vol: \_\_\_\_\_ (g/mL) Lab File ID: 8240

Level: (low/med) LOW Date Received: 05/21/93

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 05/28/93

GC Column: \_\_\_\_\_ ID: \_\_\_\_\_ (mm) Dilution Factor: \_\_\_\_\_

Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

oil Extrac CAS NO.

COMPOUND

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L Q

97-63-2- - - - -	Ethyl Methacrylate	MA	5	LL
107-02-8- - - - -	Acrolein	2/27/91	50	
108-05-4- - - - -	Vinyl Acetate		10	
107-13-1- - - - -	Acrylonitrile		50	
110-75-8- - - - -	2-Chloroethyl Vinyl Ether		10	
108-38-3- - - - -	M & P Xylene		10	
95-47-6- - - - -	O Xylene		5	
1634-04-4- - - - -	Methyl tert-Butyl Ether		5	
17-05-1- - - - -	<del>Allyl Chloride</del>		50	↓
126-98-7- - - - -	<del>Methacrylonitrile</del>		50	R
107-12-0- - - - -	<del>Propenenitrile</del>		50	R
74-88-4- - - - -	Iodomethane		50	R
80-62-6- - - - -	Methyl Methacrylate	↓	20	U

FORM I VOA

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